		PATERY A	NO TRADEBURK OFFICE	Atty. Docket Bo. 7913ZY		Serial No. 08/471,890					
	CI!	ST OF PRIOR AN	PEPIL HOUSE	Applicant							
Dae			NAAR S	Conaid k. Hurtman, et al	L •						
	DG+C	rai bheeca il la	2 1997 s	Filing Date Mine 7, 1995		Group 1103					
			PADELINE.	PATENT DOCUMENTS				,			
		DOCUMENT NUMBER	DATE	NAMB	CLASS	SUBCLASS	FILIEG (if appro				
SH	AA	2,635,994	4/27/50	Tierman							
	AB	2,957,756	10/60	Bacon							
	AC	3,009,783	12/4/59	Sheer, et al.							
	AD	3,172,774	2/28/61	Diefendorf							
	AΕ	3,317,354	5/2/67	Darrow, et al.							
	AF	4,132,671	2/2/79	Deininger, et al.							
	AG	4,167,444	9/11/79	Schweiger							
	АН	4,435,375	3/6/84	Tamura, et al.							
	AI	4,435,378	3/6/84	Reck, et al.							
	AJ _	4,767,608	8/30/88	Matsumoto, et al.							
FORBIGN PATENT DOCUMENTS											
		DOCUMENT NUMBER	DATS	COUPTRY	CI.AS8	SUBCLASS	TRANSL	ATION			
<u>-</u> 전류							YES	290			
		GB 2 101 983 A	2/23/83	United Kingdom							
Щ	AL	2 160 696	6/20/90	Japan			-				
\coprod	AM	2 221 194	2/21/89	Japan							
	AN	1,587,000	8/23/90	Russia							
V	AO	2,414,215	1/8/76	Germany							
	~~~	THER PRIOR ART (	Including Aut	hor, Title, Date, Pe	ertinent	Pages, Bt	c.)				
H	AP				iterfulle	rene, <u>Bul</u>	l. Chem.	Soc.			
	AR				Extrac	tion Stud	ies, <u>App</u> ]	lied			
	AS	Almlof et al., 7 Calculations on 1987, pp. 35-48	Very Large S	tethods and Results f Systems Carbon Cluste	or Blect ers, <u>ACS</u>	ronic Str Symposium	ucture Series,	353,			
	AT	Amato, A First 8	3ighting of E	Buckyballs in the Wil	ld, <u>Scie</u> n	<u>ce</u> , 257(5	067), 199	92, p.			
	UA	Amic et al., On the Lack of Reactivity of Buckminsterfullerene: A Theoretical Study, J. Chem. Soc. Perkin Trans., 1990, pp. 1595-1598									
					AV Bacon, R., <u>J. Applied Physics</u> , 31(2), 1960, pp. 283-290						
	AV	Bacon, R., J. Ar	· · · · · · · · · · · · · · · · · · ·	es, 31(2), 1960, pp.	283-290						
	Use SH	Use several services of the se	LIST OF PRIOR AN CITRD BY APPLICA  Use several sheets if new sever	LIST OF PRIOR ART ROOM USe several sheets if measure 1997  USE SEE DOCUMENT HUMBER DATE  SH AA 2,635,994 4/27/50  AB 2,957,756 10/60  AC 3,009,783 12/4/59  AD 3,172,774 2/28/61  AE 3,317,354 5/2/67  AF 4,132,671 2/2/79  AG 4,167,444 9/11/79  AH 4,435,375 3/6/84  AJ 4,767,608 8/30/88  FOREIGE  DOCUMENT HUMBER DATE  SH AK GB 2 101 983 A 2/23/83  AL 2 160 696 6/20/90  AM 2 221 194 2/21/89  AN 1,587,000 8/23/90  AO 2,414,215 1/8/76  OTHER PRIOR ART (Including Aut  AP Aihara et al., Spherical Arc  Jon., 61, 1988, pp. 2657-265  AR Akhter, et al., The Structur Spectroscopy, 39(1), 1985, pp. 35-48  AT Amato, A First Sighting of Editor and Calculations on Very Large Science and Cal	LIST OF PRIOR ART CITED BY APPLICATE APPLICATION APPLICATE APPLICATION APPLICATE APPLICATION APPLICATE APPLICATION APPLICATION APPLICATE APPLICATION APPLICATION APPLICATION APPLICATE APPLICATION APPLI	LIST OF PRIOR ART CITED BY APPLICATION AND PARTIES OF THE BY APPLICATION APPLI	LIST OF PRIOR ART CITED BY APPLICATION RO DOCUMENT HUMBER  LA 2,635,994	LIST OF PRIOR ART CITED BY APPLICATION APP			

* KEAMINER: Initial if reference considered, whether or not citation is in conformance with MPRP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO (REV. 7-6	00)		PATENT A	ARTHURIT OF COMOGRESS NO TRADEMONIA OFFICE	Atty. Docket Bo. 79132Y		Serial No. 08/471,890		
			OF PRIOR AND BY APPLICA		Applicant Donald R. Ruffman, et al	•			
ס)	86 86	everal	sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
				v.s.	PATENT DOCUMENTS		<del></del>		
KEAMINI		DX.	COMMET NUMBER	DATE	HEADER	CLASS	SUBCLASS	FILING (if appro	
S	H A	A 4,9	915,977	4/10/90	Okamoto, et al.				
	Al	3 4,9	922,827	5/8/90	Remo				
	A	5,3	114,477	5/19/92	Mort, et al.	<del> </del>			
1	/ Al	5,:	132,105	7/21/92	Remo				
	A	3 5,2	234,474	6/19/91	Whewell				-
	A	7				,			
	A	3						-	
	Al	н				•		<del></del>	
	A:	ľ						·	
	A	J	<del>-</del>						· · · · ·
<del></del>	FOREIGN PATENT DOCUMENTS								
	DOCUMENT NUMBER DATE				COUNTRY	CLASS	SUBCLASS	TRANSL	ATION
								YES	NO.
	Al	ĸ			-				<u>,                                      </u>
	A	ւ				<b>,</b>			
	Al	M							
	Al	N							
	A	0							
		OTHE	R PRIOR ART (	Including Aut	thor, Title, Date, Pe	ertinent	Pages, Rt	c.)	
SI	H A	to		and Other Sy	outer Generation of S stems, <u>Journal of Cor</u>				
	A				Carbon Cages as a Sou urnal, 356, 1990, pp.			ar Diffu	se
	A	S Bla	au et al., An yers on Alumi	Investigationum, <u>Thin So</u>	on of the Microfricti lid Films, 219, 1993,	ional Beb	avior of	C ₆₀ Parti	.cle
	A	T Bl	oomfield et a emical Physic	l., Negative <u>s Letters</u> , 1	and Positive Cluster 21(1)(2), 1985, pp. 3	r Ions of	Carbon a	nd Silic	on,
	A				the Structural Chemi 1987, pp. 483-527	istry of	Crystalli	ne Carbo	n,
V	A	V Br	endsdal et al tters, 21(4),	., Normal Co.	ordinate Analysis of 13-318	*Footbal	lene" Cso,	Specros	сору
EXAMIN	ER	/S	tuart Hend	rickson/	( <del>128/978/200</del> 6)	<del> </del>			
• KEAM through	h cita	Initia tion if	l if reference c	omsidered, wheth	her or not citation is in sidered. Include copy of	conformance this form	e with MPRP with next o	609; draw	line on to

Sheet	3	of	31

				<del></del>		<del></del>		
Porm PTO-144 (REV. 7-80)		PATENT A	ARTHOUT OF CONCERCE ED TRADESCAR OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,8		
		ST OF PRIOR AL		Applicant Donald R. Huffman, et al	<b>.</b> .			
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995 Group 1103				
			v.s.	PATENT DOCUMENTS				
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	MANGS	CLASS	SUBCLASS		G DATE copriate)
	AA			· · · · · · · · · · · · · · · · · · ·				
	AB							
	AC							
	AD							
	AB							
	AF							
	AG							
	AH				<u> </u>			
	AI							
	AJ						<u> </u>	
FORBIG				N PATENT DOCUMENTS			<u> </u>	
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANS	LATION
				·	<u> </u>		ARS	NO
	AK		<u> </u>					
,	AL							
	AM							
	AN			, , , , , , , , , , , , , , , , , , ,				
	AO				·	<u> </u>		
	C	THER PRIOR ART (	Including Au	thor, Title, Date, Po	ertinent	Pages, Bt	.c.)	
SI	АР			ates of Molecular Vil , 1988, pp. 319-339	brations	of "Footh	allene"	C ₆₀ ,
SH	AR	Brendsdal et al Structure (Theo		ructures of Footballe	ene, <u>Jou</u>	mal of Mo	lecular	
SH	AS	Brown, High Sym 1987, pp. 128-1		uantum Chemistry, <u>Ch</u>	emical Pl	ysics Let	<u>ters</u> , 1	36(2),
SH	AT	Buseck et al., 1992, pp. 215-2		rom the Geological E	nvironmer	nt, <u>Scienc</u>	<u>:e</u> , 257(	5067),
SH	ΑU	Bussoletti, Dus	ty Objects i	n the Universe, pp.	89-93			
SH	AV	Campbell et al. 93(9), 1990, pp		, Simple Carbon Clus	ter Source	ce, <u>J. Che</u>	m. Phys	 -•
REMONES		/Stuart Hend	-	1276772006)				
• EXMIRE				her or not citation is in sidered. Include copy of				

applicant.

Porm PTO-1441 (REV. 7-80)		PATRIET AN	RINGST OF CONSECS D TRANSMARK OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,890		
		ST OF PRIOR AR	_	Applicant Donald R. Huffman, et al		-		
(Use	seve	ral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
	-		U.S.	PATENT DOCUMENTS				
EXAMINER INITIAL*		DOCUMENT NUMBER	DATS	HAKB	CLASS	SUBCLASS	VILING DATE (if appropriate)	
	AA			·				
	AB							
	AC							
	AD							
	AE							
	AF							
-	AG				• •			
· · · · · · · · · · · · · · · · · · ·	АН	·			·			
	AI							
-	AJ							
FORBIGN PATENT DOCUMENTS								
		DOCUMENT HUNGER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YRS NO	
	AK					· · · · · · · · · · · · · · · · · · ·		
	AL							
	AM		· · · · · · · · · · · · · · · · · · ·					
	AN							
	AO							
		<del>, , _ , _ , , , , , , , , , , , , ,</del>	<del></del>	thor, Title, Date, Pe				
SH	AP			netry and the Static ical Review A, 39(2),				
SH	AR			reller Instability of hem. Phys., 93(2), 19				
SH	AS	Normales de Vib	ration D'Agre	de Proprietes Electr egats Carbones Forman chimie physiuque, 84,	t Des Po	lyedres R		
SH	AT	Cox et al., C ₆₀ L 2457-2458	a:A Deflated	Soccer Ball?, J. Am.	Chem, S	Soc., 108,	1986, pp.	
SH	AU			Revisited:The "Speci hys., 88(3), 1988, pp			and Large	
SH	AV	Creasy, Some Mod Phys., 92(12),		ions of Carbon Cluste 23-7233	er Growth	Kinetics	, <u>J. Chem.</u>	
EXAMINER		/Stuart Hend	rickson/	12787/2006)				
	itatio			her or not citation is in midered. Include copy of				

a consideration of the same

Form PTO-144 (REV. 7-80)		PATERT A	U.S. DEPARTMENT OF CHOCKET ALTY. Docket No.  PATENT AND TRADEGAR OFFICE  79132Y  Serial No. 08/471,890					
	CI	ST OF PRIOR AF	NT	Applicant Donald R. Huffman, et al				
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
			σ.ε.	PATENT DOCUMENTS		- · <del>-</del>		
KEAMINER INITIAL*		DOCUMENT NUMBER	DATE	XAMB	CLASS	SUBCLASS		DATE opriate)
	AA			· .			_	
<u> </u>	AB	•						
	AC							
	AD							
	AE	)						
	AP							
	AG							
	АН	,			•			
	AI							
	ΑJ						·	
FORBIG				PATENT DOCUMENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSI	ATION
							YES	150
	AK		<del></del>		·			
	AL							
	AM							
	AN							
	AO						·	
	0	THER PRIOR ART ()	including Aut	hor, Title, Date, Pe	rtinent	Pages, Bt	c.)	
SH	AP			Cluster Ion Pormationical Physics, 126, 1			on of	
SH	AR	Creasy et al., I of Polymers and	Formation of Thin Carbon	High Mass Carbon Clu Films, <u>J. Chem. Phys</u>	ster Ion , 92(4)	s from La , 1990, p	ser Abia p. 2269-	tion 2277
.CH	AS	Curl et al., Pro	bing C ₆₀ , <u>Sc</u>	ience, 242, 1988, pp.	1017-10	22		
1	AT	Curl et al., Ful	llerenes, <u>Sci</u>	lentific America, 199	1, pp. 5	4-64		
	AU	Cyvin et al., Mo 143(4), 1988, pr		rations of Footballer	e, <u>Chemi</u>	cal Physi	cs Lette	ers,
V	AV	Daniel, Jr., Stu International, 4	dies Toward 19(5), 1988,	a Convergent Synthes p. 1706-B	is of C ₆₀	, <u>Dissert</u>	ion Abst	tracts
RYANTINES.		Stuart Hendr	ickson/ (	1 <del>2/</del> 0 <del>7/200</del> 6)				
• EXAMINE through c: applicant	itatio			er or not citation is in sidered. Include copy of				

Form PTO-1445 (REV. 7-80)		PATEST AN	REPORT OF CONCERCE TO TRADESCRIK OFFICE	Atty. Docket Ho. 79132Y		Serial No. 08/471,890		
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al				
(Vse	seve	ral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103		
			v.s.	PATENT DOCUMENTS				
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	EDAMB	CZŁASS	SUBCLASS	VILING DATE (if appropriate)	
	AA							
	AB							
	AC							
	AD			,				
	AB							
	AF				-			
	AG							
	АН	·			•			
	AI							
	AJ							
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION			
ļ				•			YES EO	
	AK							
	AL					<del></del>		
	AM							
	AN					<u> </u>	<u> </u>	
	AO	FUED DUTOD APT /	Including Au	thor, Title, Date, Po	ertinent	Pages. Rt	<u> </u>	
SH	AP	Dias. A Facile	Huckel Molect	ular Orbital Solution nal of Chemical Educa	of Buck	minsterfu	llene Using	
SH	AR	Dietz et al., L. Phys., 74(1), 1		ion of Supersonic Met 1-6512	tal Clust	er Beams,	J. Chem.	
SH	AS	Disch et al., O Letters, 125(5)		l Clusters of Carbon p. 465-466	Atoms: C	o, <u>Chemica</u>	al Physics	
SH	AT	Ebbesen, et al. 1634-1635	, Origins of	Fullerenes in Rocks	, <u>Sc</u>	<u>cience</u> , 26	58, 1995, pp.	
SH	AU			vior of Icosahedral ( ), 1987, pp. 4579-45		ical Revi	ew of General	
SH	AV	Blser et al., I Ring Current Ma	cosahedral C gnetic Susce	:o:An Aromatic Molecu ptibility, <u>Nature</u> , 3:	le with a 25, 1987,	a Vanishir pp. 792-	ngly Small 794	
REAMONER		/Stuart Hend	rickson/	12/07/2006)		<del></del> -		
* EXAMINE through c applicant	itatio	nitial if reference o	onsidered, whet	her or not citation is in sidered. Include copy of	conformance this form	e with MPRI with next o	609; draw line	

Sheet	 of	31

						Shee	t <u>7</u> of <u>31</u>
Porm PTO-1449 (REV. 7-80)		PATEST AL	ATHERT OF CONCERCE ID TRADEBURE OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,8	
		ST OF PRIOR AF	<del></del>	Applicant Donald R. Huffman, et a	al.	<u> </u>	
(Use	seve	ral sheets if ne	cessary) _.	Filing Date June 7, 1995	Group 1103		
			U.S.	PATENT DOCUMENTS			
TAMINER NITIAL•		DOCUMENT EUMBER	DATE	MANE	CLASS	SUBCLASS	PILING DATE (if appropriate)
	AA						
	AB	•					_
	AC						
	AD						
	AB						
	AF						
<u></u> -	AG						
	АН	•			1		
	AI						
	<b>AJ</b>						
			PORRIG	N PATENT DOCUMENTS			
		DOCUMENT NUMBER	HUMBER DATE COUPTRY CLASS SUBCL	SUBCLASS	TRANSLATION		
				•	<u> </u>		YES EO
	AK						
	AL	• • • • • • • • • • • • • • • • • • • •					
	AM	·					
	AN		<del></del>			ļ	
	AO						
	0	THER PRIOR ART (	Including Au	thor, Title, Date,	Pertinent	Pages, Bt	:c.)
S	AP H			Emission from Polymonent, <u>J. Phys. Che</u>			_
· S	AR H	Carbon Clusters	(I):The Ble erene and Ot	al Investigation of ctronic Structure a her C ₆₀ Cages, <u>Inter</u> . 509-607	nd UV Spec	ctra of	
SH	AS	Fowler et al., 1986, pp. 78-83	_	Three Dimensions,	Chemical 1	Physics Le	etters, 127(1),
SH	АТ	Fowler, Carbon Faraday Trans.,		Class of Closed-she	ll Cluste	rs, <u>J. Ch</u> e	em. Soc.
SH	ΑU	Powler, How Unu Physics Letters		Magic Numbers for 86, pp. 444-450	Carbon Cl	usters, <u>C</u>	nemical
SH	AV	Fowler et al., Theor. Chim. Ac		of Bonding in Non-Id	cosahedra.	Carbon C	Clusters,
CANCEL MICES	1	/Stuart Hendr	ickson/	(1270772006)		<del></del>	
STANTED	B. In	<del></del>	<u> </u>	her or not citation is i	n conforman	e with MDRD	609; draw line

through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Porm PTO-1449 (REV. 7-80)		PATENT A	ARTHURST OF COMOURCES	Atty. Docket No. 79132Y		Serial No. 08/471,8		
	CIT	ST OF PRIOR AN	nt	Applicant Donald R. Huffman, et al		•		
(Use	seve	eral sheets if ne	cessary)	Filing Date June 7, 1995	<del>.</del>	Group 1103		<u> </u>
			σ.s.	PATENT DOCUMENTS	. · <u></u>	······································		
EXAMINER INITIAL®		DOCUMENT HUMBER	DATE	EAME	CLASS	SUBCLASS		G DATE Copriate)
	AA			·				
	AB							· -
	AC						_	
	AD							
	AB			·				
	AF	·					<u> </u>	· · · · · · · · · · · · · · · · · · ·
	AG							
	АН	•						
	AI							
	ΆĴ				, , , , , , , , , , , , , , , , , , ,			····
FOREIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY	COUNTRY CLASS	SUBCLASS	TRANSI	ATION
				•	,		YES	180
· · · · · · · · · · · · · · · · · · ·	AK							
	AL				ļ	- "		
	AM		·		<b>}</b>			
	AN					<u></u>		
	AO				<u> </u>	<u> </u>	<u> </u>	
				thor, Title, Date, Po				_
SH	AP			Magnetic Properties ters, 165(1), 1990, p			ixty-Cai	rbon
SH	AR			Principle:A Rule for em. Commun., 1987, pr			of Carbo	on
SH	AS	Gerhardt et al. Physical Letter		Carbon Ions in Hydro 37, pp. 306-310	ocarbon F	lames, <u>Ch</u>	<u>emical</u>	
SH	AT		mes, Twenty-S	ion of Polyhedral Car Second Symposium (Int pp. 395-401				
SH	AU			Species in Sooting tion and Fuels in Gas				
SH	AV	Gerhardt et al., Letters, 137(4)		Carbon Ions in Hydro 306-310	ocarbon F	lames, <u>Ch</u>	emical I	Physics
EXAMINER	/s	tuart Hendri	ckson/ (1	2707720067				
• EXAMINED through cant.	ltatic	itial if reference or n if not in conformar	onsidered, wheth nee and not cons	er or not citation is in sidered. Include copy of	conformanc this form	e with MPKP with next co	609; drav comunicati	line on to

Sheet	9	of	31

Form PTO-144 (REV. 7-80)		PATEST AS	ARTHERT OF COMMERCE OF TRADERIARY OFFICE	Atty. Docket Mo. 7913ZY		Serial No. 08/471,8	
		ST OF PRIOR ARTED BY APPLICA		Applicant		<u> </u>	
(Use	seve	ral sheets if ne	cessarv)	Donald R. Huffman, et al		, ———	
				Filing Date June 7, 1995		Group 1103	
			v.s.	PATENT DOCUMENTS			•
RKAMINER INITIAL*		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (if appropriate)
	AA						
	AB					-	
	AC						
	AD	·					
	AE				-		
	AP						
	AG						
	AH	•			•		
	AI		<del></del>				
	ΑJ		<del></del>	·	<del></del>	<del></del>	
FOREIGN PATENT DOCUMENTS							
-		DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS TRANSLATION					TRANSLATION
			<u></u>			· · · · · · · · · · · · · · · · · · ·	YES NO
	AK						•
_	AL						
	AM				<u> </u>	:	
	AN	·					
	AO	WIND DRIVE ADM /	Cooludina Tud	her mitle Date D		D	\
	AP			thor, Title, Date, Pe			·
SH	ł.	and Benzene Flam Combustion Insti	nes, Twenty-S	ion of Polyhedral Car Second Symposium (Int pp. 395-401	ernation	al) on Co	mbustion/The
SH	AR	Geusic et al., 1 86(7), 1987, pp.	Photodissocia . 3862-3869	ation of Carbon Clust	er Catio	ກຣ, <u>J. Ch</u>	em. Phys.,
SH	AS	Structurally Cha	aracterized 1	rity in Conjugated Or Molecule Displays the hem. Soc., 112, 1990	Highest	Degree o	hich f
SH	AT	Haddon et al., I Physics Letters,		tructure and Bonding 1986, pp. 459-464	in Icosa	hedral C	, Chemical
SH	AU	Haddon et al., l Vanishingly Smal <u>Letters</u> , 169(4),	ll Ring Curre	C ₆₀ Revisited:An Aroment Magnetic Susception 362-364	atic Mole	cule with Chemical	n a Physics
SH	AV	Haddon et al., F of Spheroidal Ca	Rehybridizati arbon Cluster	ion and π-Orbital Ali rs, <u>Chemical Physics</u>	gnment:T Letters,	he Key to 131(3),	the Existence
REALDER		Stuart Hendr	ickson/ (	<b>127</b> 077 2006)		· · · ·	
+ PYANTEN		1112 15		per or not citation to in		- Jak MWD	500 dee- 1/a

* KLAMINER: Initial if reference considered, whether or not citation is in conformance with MPRP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-144 (REV. 7-80)	•	C.A. DEP. PATENT A	ARTHORY OF COMMERCE ED TRADENCER OFFICE	Atty. Docket So. 7913ZY		Serial No. 08/471,8		<u> </u>
		ST OF PRIOR AF		Applicant Donald R. Huffman, et al		<u> </u>		
(Ове	seve	eral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103	·	
				PATENT DOCUMENTS				<del></del>
EXAMINER		DOCUMENT MURRE	DATE	EAMB	CLASS	SUBCLASS	PILING	
INITIAL*	AA			-			(if appro	opriate)
	AB				-			
	AC				<del></del>			
	AD		-					
	·AB							
	AP							
	AG						·	<del></del>
-· <u>-</u> -·. <u>-</u>	АН	•			·		<del> </del>	
	AI		<u> </u>	-				
	ΑJ							
			FORRIG	N PATENT DOCUMENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSL	ation
	-			-			YRS	NO
	AK		·	•		<u> </u>		
	AL							<u>.                                      </u>
<u> </u>	AM							
<u> </u>	AN							
	AO				<u> </u>	<u> </u>		
ļ	T	T		thor, Title, Date, Pe	<del></del>	·		
SH_	AP	Physics Letters	, 130(1)(1),	in C+, and C, Abundan 1986, pp. 12-16				
SH	AR	Spherical C CC	uster:Predic	K Alpha Blectronic St tion of Ionization Po nem. Soc., 108, 1986,	otential	and Blect		
SH	AS		onaceous Sour	of Gaseous Hydrocar rce for Cluster Forma 3				
SH	AT	Hargittai et al pp. 239-287	., Quasicrys	tals, Networks and Mo	olecules	of Fivefo	old Symme	etry,
SH	ΑU			l Spectral Fine Structure 32(4)(5), 1986, pp. 3		Icosahedr	al Molec	ules,
SH	AV			ration Spectra of Ico				.089,
REANTERR		/Stuart Hend	rickson/	(44年/44年/44年)				
* KKAMINE through c applicant	itatio			her or not citation is in sidered. Include copy of				

Form PTO-1441 (REV. 7-80)		PATENT AR	RIVERT OF CONCECTS D TRADESUARK OFFICE	Atty. Docket No. 79132Y	· ——	Serial No. 08/471,8	90
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al	•		
(Vse	seve	ral sheets if ned	cessary)	Filing Date June 7, 1995		Group 1103	
	•		บ.ร.	PATENT DOCUMENTS	· —		
HEAMINER INITIAL*		DOCUMENT NUMBER	DATE	MAMIR	CLASS	SUBCLASS	FILING DATE (if appropriate)
	AA						
	AB						
	AC						
	AD						
	AE						
	AF					_	
	AG						
	ΑН	·			•		
	AI						
	AJ						
			FORBICE	PATENT DOCUMENTS			
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TEANSLATION
				·			YRS NO
	AK						
	AL						
	AM						
	AN						
	AO						
	0			thor, Title, Date, Pe			
SH	AP	Hayden et al., 7 36(9), 1987, pp.		the Icosahedral C ₆₀ (	Cluster,	Physical	Review B,
SH	AR	Haymet, C ₁₂₀ and Atoms, <u>Chemical</u>	C _{so} :Archimedo Physics Let	ean Solids Constructe ters, 122(5), 1985, p	ed from s op. 421-4	p ² Hybrid: 24	ized Carbon
SH	AS			etical Prediction for Am. Chem. Soc., 108			
SH	AT			g Carbon Chain Molecu oc., 109, 1987, pp. 3		ng Laser	Vaporization
SH	AU			hain Molecules in Cir 1987, pp. 352-355	rcumstell	ar Shells	, <u>The</u>
SH	AV	Heath et al., La Soc., 107, 1985,		plexes of Spheroidal 780	Carbon S	hells, <u>J.</u>	Am. Chem.
EXAMINER	/s	tuart Hendri	ckson/ (1	270772006)			
	itatio			her or not citation is in sidered. Include copy of			

Form PTO-1449 (REV. 7-80)		PATEST AM	RIMENT OF CONCERCE D TRADESCARA OFFICE	Atty. Docket No. 79132Y		Serial No. 08/471,8	90	•
		ST OF PRIOR AR TED BY APPLICAL		Applicant Donald R. Huffman, et al	•	<u> </u>	<u></u>	<del></del>
(Use	вeve	ral sheets if ned	cessary)	Piling Date June 7, 1995		Group 1103		
			v.s.	PATENT DOCUMENTS				
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	NAMB	CLASS	SUBCLASS	FILING (if appr	
	AA							
	AB						<del>-</del>	
	AC		··· <u>-</u> ···					
	AD							
	·AE							
	AF			-				
	AG							
	AH							
	AI							
	AJ							
			FOREIG	PATENT DOCUMENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Transi	ATION
				•			YKS	NO
	AK							
	AL							
	AM AN				<u>                                      </u>			
	AO							
		THE PRIOR ART (	Including Au	thor, Title, Date, Pe	rtinent	Pages - Rt	C-)	
SH	AP	Heath et al., Th	ne UV Absorpt	tion Spectrum of C ₆₀	(buckmins	terfuller	<del></del>	Narrow
SH	AR	<u></u>		rth with buckyballs,		· <u>· · · · · · · · · · · · · · · · · · </u>	. 16	
30	AS	Hess, Jr. et al.		lity of Footballene,				3902-
SH		3903						_•
SH	AT	265, 1994, pp. ( Carriers of Tra	545-647 Heyma oped Inert G tary Science	in the Cretaceous-Teann, Buckminsterfulle ases in Meteorites?, Conference, Part 1, . E135-E138	erene, it <u>Proceedi</u>	s Sibling	s, and s e Sevent	Soot,
SH	AU		meriments or	ulties in Laboratory n Cosmic Dust Analog				et 
SH	AV	<del></del>		tist, 1966, pp. 118-	L19			
EXAMINER		/Stuart Hend	rickson/	( <del>12/07/200</del> 6)				
	itatio			her or not citation is in sidered. Include copy of				

Sheet	13	of	31

•					$\overline{}$	Sneet	13 01	· <u>31</u>
Form PTO-144: (REV. 7-80)		PATENT A	AKTREST OF CONCERCE TRADESPARK OFFICE	Atty. Docket Bo. 7913ZY		Serial No. 08/471,8		
	CIT	ST OF PRIOR AL	NT	Applicant Donald R. Huffman, et al				
Use)	seve	eral sheets if ne	cessary) 	Filing Date June 7, 1995		Group 1103		
···· <u></u> ·			v.s.	PATENT DOCUMENTS				
REAMINED INITIAL*		DOCUMENT MINERS	DATE	FIANCE	CLASS	SUBCLASS	PILING D (if appropr	
	AA							
	AB							
	AC							
	AD							
	AE							
	AF							
· <del>-</del> ·	AG							•
	АН	·			•			
	AI							
	AJ							
	-		FOREIG	N PATENT DOCUMENTS	<del></del>		<u></u>	
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLAT	ION
				•			YES	NO
	AK							
	AL							
	AM							
	AN							
	AO							
	O	THER PRIOR ART (	including Aut	thor, Title, Date, Pe	ertinent	Pages, Bt	c.)	
SH	AP	Howard et al., 1 pp. 139-141	ullerenes C	o and C70 in Flames,	Letters (	to Nature,	352, 199	2,
GII	AR	Huffman, D., et	al., <u>Nature</u>	(Phys. Sci)., 243, 1	1973, pp.	50-51		
- 5n	AS	Analogues", in l	book "Experie	ifficulties in Labora ments on Cosmic Dust lishers, Boston MA, 1	Analogue	es", Busso	osmic Dust letti, E.,	-
	AT	Iijima, The 60-0 3466-3467	Carbon Cluste	er Has Been Revealed?	?, <u>J. Ph</u> y	s. Chem.,	91, 1987,	, pp.
	AU	Jelski et al., ( <u>Education</u> , 65(1)		k Between Molecules a . 879-883	and Solid	s, <u>Journa</u>	l of Chemi	cal
<b>V</b>	AV	Jiang et al., St <u>Actra</u> , 75, 1989		Reactivities Based o	on Moment	Analysis	, Theor. C	him.
KERANIENKR		/Stuart He	ndrickson	/ ^{na} (1270772006)				
* EXAMINED through co	l: In	itial if reference on if not in conformation	maidered, wheth	per or not citation is in sidered. Include copy of	conformanc this form	e with MPRP with next or	609; draw li	ine to

	_	_	
Sheet	<u>14</u>	of	31_

Porm PTO-1449 (REV. 7-80)		PAREST AI	ARTHURIT OF CCHOCERCE ED TRADESCARA OFFICE	Atty. Docket Ho. 7913ZY		Serial No. 08/471,8	
		ST OF PRIOR AS		Applicant Donald R. Huffman, et al			<del></del>
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103	
			v.s.	PATENT DOCUMENTS			
HEAMINER INITIAL*		DOCUMENT NUMBER	DATE	MAKE	CLASS	SUBCLASS	PILING DATE (if appropriate)
	AA	· · · · · · · · · · · · · · · · · · ·					
	AB						
	AC						•
	AD						
	AB	_					
	AF						
	AG						
	AH						
:	AI		-				
	АJ						
			POREIGN	PATENT DOCUMENTS			
						· · · · · ·	<u></u>
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
		DOCUMENT NUMBER	DATE	COURTRY	CLASS	SUBCLASS	TRANSLATION YES HO
	AK	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	· · · · · · · · · · · · · · · · · · ·
	AK AL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	· · · · · · · · · · · · · · · · · · ·
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	· · · · · · · · · · · · · · · · · · ·
	AL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	· · · · · · · · · · · · · · · · · · ·
	AL AM AN AO		·				YES NO
	AL AM AN AO		·	thor, Title, Date, Pe			YES NO
SH	AL AM AN AO	THER PRIOR ART (	Including Aut		ertinent	Pages, Et	YES EO
SH	AL AM AN AO	THER PRIOR ART (: Joblin et al., I 346, 1990, pp.	Including Autorion of 729-731	hor, Title, Date, Pe	ertinent Bands i	Pages, Et	c.) rared, <u>Nature</u> ,
	AL AM AN AO O	THER PRIOR ART ()  Joblin et al., 1  346, 1990, pp.  Kaldor et al., 1  Microclusters:P	Including Autorion of 729-731 Molecular Surroceedings of	thor, Title, Date, Pe Diffuse Interstellar rfaces: Chemistry and	Physics osium, 19	Pages, Et n the Inf of Gas Ph 87, pp. 9	c.) rared, <u>Nature</u> , ase Clusters, 6-106
	AL AM AN AO CO AP	THER PRIOR ART ()  Joblin et al., 1  346, 1990, pp.  Kaldor et al., 1  Microclusters:P:  Kaldor et al., 1  Microclusters:P:  Kaldor et al., 1	Including Autorion of 729-731 Molecular Surroceedings of the Basics of et al., Diam	thor, Title, Date, Per Diffuse Interstellar cfaces: Chemistry and the First NEC Sympo	Physics sium, 19 Chemtec	Pages, Et n the Inf of Gas Ph 87, pp. 9	c.) rared, Nature, ase Clusters, 6-106 pp. 300-307
	AL AM AN AO O AP AR	Joblin et al., I 346, 1990, pp. Kaldor et al., Microclusters:Pt Kaldor et al., Kamo, Mutsukazu Journal of Cryst	Including Autorice Carbon Pa	thor, Title, Date, Per Diffuse Interstellar refaces: Chemistry and the First NEC Sympos Molecular Surfaces, mond Synthesis from Co. 1983, pp. 642-644 article Formation by	Physics sium, 19 Chemtec	Pages, Et n the Inf of Gas Ph 87, pp. 9	c.) rared, Nature, ase Clusters, 6-106 pp. 300-307 wave Plasma,
	AL AM AN AO O AP AR AS AT	THER PRIOR ART (:  Joblin et al., I 346, 1990, pp.  Kaldor et al., I Microclusters:P:  Kaldor et al., I Microclusters:P:  Kaldor et al., I Kamo, Mutsukazu Journal of Cryst  Kappler, P., PF: Applied Phys.,  Kataoka et al.,	Including Autorical Carbon Page 1979, Geometrical	thor, Title, Date, Per Diffuse Interstellar refaces: Chemistry and the First NEC Sympos Molecular Surfaces, mond Synthesis from Co. 1983, pp. 642-644 article Formation by	Physics sium, 19 Chemtec	Pages, Et n the Inf of Gas Ph 87, pp. 9 h, 1987, in Micro	rared, Nature, ase Clusters, 6-106 pp. 300-307 wave Plasma, ensation, J.
	AL AM AN AO O AP AR AS AT AU AV	THER PRIOR ART (:  Joblin et al., I 346, 1990, pp.  Kaldor et al., I Microclusters:P:  Kaldor et al., I Microclusters:P:  Kaldor et al., I Kamo, Mutsukazu Journal of Cryst  Kappler, P., PF: Applied Phys.,  Kataoka et al.,	Including Autorical Tetrahedron,	thor, Title, Date, Per Diffuse Interstellar refaces: Chemistry and the First NEC Sympos Molecular Surfaces, mond Synthesis from 62, 1983, pp. 642-644 article Formation by pp. 308-316  Structures and Spect 42(23), pp. 6437-644	Physics sium, 19 Chemtec	Pages, Et n the Inf of Gas Ph 87, pp. 9 h, 1987, in Micro	rared, Nature, ase Clusters, 6-106 pp. 300-307 wave Plasma, ensation, J.

•					$\sim$	J	<u> </u>	Jt <u></u>
Porm P10-144: (RBV. 7-80)		PATEST A	ARTHURIT OF COMMERCE ED TRADBUARE OFFICE	Atty. Docket No. 79132Y		Serial No. 08/471,8		
_	CIT	ST OF PRIOR AF	NT	Applicant Donald R. Huffman, et al	•			
(Use	seve	ral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
<del></del>		<del>-</del>	U.S.	PATENT DOCUMENTS		<u> </u>	· · · · · · · · · · · · · · · · · · ·	
EXAMINER INITIAL*		DOCUMENT MUMBER	DATE	HAMB	CLASS	SUBCLASS	FILING D	
	AA							
	AB							
	AC						. <u> </u>	
	AD							
	AE		•					
	AP							
	AG							•
	AH							
-	AI							
	AJ							
	-		FORBIG	N PATENT DOCUMENTS		_		
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLAT	TON
				•			YRS	EO
	AK							
	AL							
	MA							
	AN							
	AO				<u> </u>	<u></u>		
	0	THER PRIOR ART (	Including Au	thor, Title, Date, Pe	ertinent	Pages, Rt	c.)	
SH	AP	Keller, Der C60 31, 1987, pp. 6		tballen oder Buckmine	sterfulle	erene, <u>GIT</u>	. Fachz.	<u>Lab</u> ,
SH	AR			f Chemical Technology pagulants to Cardiova				·
SH	AS	Klein et al., I pp. 703-706	cosahedral S	ymmetry Carbon Cage N	Molecules	, <u>Nature</u> ,	323, 198	6,
SH	AT	Klein et al., R 1986, pp. 1301-		C _{co} Buckminsterfuller	ene, <u>J.</u>	Am. Chem.	<u>Soc.</u> , 108	
SH	AU			ybridization in Some antum Chemistry Sympo				
SH	AV		Universe:Pro	arch for the UV and I ceedings of the 4th I Italy, 1989				
REAMINER		/Stuart Hend:	rickson/	12/07/2006)				
	itatio			her or not citation is in sidered. Include copy of				

Form PTO-144 (REV. 7-80)		PATENT A	ARTHURT OF COMMERCE ND TRADEMARK OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,8		
,		ST OF PRIOR AI	<del></del>	Applicant Donald R. Huffman, et al	•	<u> </u>		<del></del>
(Use	8eve	eral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103	<del></del>	<u></u>
			<b>U.S.</b>	PATENT DOCUMENTS	<u> </u>			<del></del>
REACTINER INITIAL+		DOCUMENT HUMBER .	DATE	NAME	CLASS	SUBCLASS		G DATE copriate)
	AA							
	AB					**		
	AC							
	AD							
	AE							
	AF			, , , , , , , , , , , , , , , , , , , ,				
	AG							
	АН			· · · · · · · · · · · · · · · · · · ·				<del></del>
	AI							<del></del>
	АJ							
			FOREIG	N PATENT DOCUMENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANS	LATION
				•			YES	NO
	AK							<del> </del>
	AL		<u> </u>					
	AM			·····			-	
	AN							
	AO					···-		
	1			thor, Title, Date, Pe				
SH	AP		uced Carbon I	ared and Ultraviolet Dust:Bvidence for the 70(2)(3), 1990				cule,
	AR	Kratschmer, W.,	et al., Cher	n. Phys. Lett., 170(2	2)(3), 19	90, pp. 1	67-170	
	AS	Kratschmer, W.,	et al., Sur	Eace Science, 156, 19	85, pp.	814-821		
	AT			ectroscopy of Matrix- 50 nm Wavelength, <u>Sur</u>				pp.
	AU			or the UV and IR Spec Objects in the Unive				
V	AV		alaxy:Studies	ructure of Circumstel s from Earth and Spac				
EXAMINER	/\$	Stuart Hendri	.ckson/ (1	270772006)				
	itatio			her or not citation is in sidered. Include copy of				

Porm PTO-1445 (REV. 7-80)		PATEST AN	ATTIGET OF COMMERCE	Atty. Docket Ho. 7913ZY		Serial No. 08/471,8	90	
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al	•	-		
(Use	seve	ral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103	·	
			บ.8.	PATENT DOCUMENTS				
EXAMINER INITIAL*		DOCUMENT HUMBER	DATE	HAMB	CLASS	SUBCLASS	PHING (if appro	
	AA			·				
	AB					_		
	AC							
	AD		·					
	AE				:			
	AP							
	AG							
	АН							
	AI							
	T.A							
			FOREIG	PATENT DOCUMENTS			·	
		DOCUMENT NUMBER	DATE	COURTRY	CLASS	SUBCLASS	TRANSL	ATION
				•			YES	NO
	AK							·
	AL		·					
	AM					_	· <del>************************************</del>	
	AN		·····					
	AO							
	0	THER PRIOR ART (	Including Aut	thor, Title, Date, Pe	rtinent	Pages, Bt	c.)	
SH	AP	Kroto et al., The Nature, 331, 198		of Quasi-Icosahedral	Spiral	Shell Car	bon Part	icles,
	AR	Kroto et al., C	:Buckminste	rfullerene, <u>Nature</u> ,	1985	, pp. 162	-163	
•	AS	Kroto, Giant Fu	llerenes, <u>Che</u>	emistry in Britain, 1	.980, pp.	40-45		
	AT	Kroto, The Chem: 325, 1988, pp.		Interstellar Medium,	Phil. T	rans. R.	Soc. Lan	d. A,
	ΑU	Kroto et al., Co	50: Buckminst	terfullerene, <u>Nature</u> ,	318, 19	85, pp. 1	62-163	
V	AV	Kroto, C _{so} Fulle 1990, pp. 407-41		t Fullerenes and Soot	. Pure &	Appl. Ch	<u>em.</u> , 62 (	3),
EXAMINER		/Stuart Hence	drickson/	(12/07/2006)				
* EXAMINE through c applicant	itatio	uitial if reference com if not in conformation	ensidered, wheth are and not cons	mer or not citation is in sidered. Include copy of	conformanc this form	e with NPRP with next co	609; draw mmmicatio	line m to

Company of the same of

. • د که ۱۹۸۰ نشتهاسم و

		<del></del>	<del></del>	<del></del>		<del></del>		
Porm PTO-144. (REV. 7-80)	-	PATENT AL	ARTHUST OF CONCERCE TO TRADSMARK OFFICE	Atty. Docket Bo. 79132Y		Serial No. 08/471,8		
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al	•	· · · · · · · · · · · · · · · · · · ·		
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995	•	Group 1103		
			υ.s.	PATENT DOCUMENTS				
EXAMINED INITIAL*		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	(if appro	
-	AA		<del></del>					
-	AB		-					
	AC							
	AD							
<u>-</u> .	AE							
	AF							
	AG		<u> </u>					
	AH	•			·			
	AI							
<del></del>	ΑJ							
<del></del>			FORBIG	PATENT DOCUMENTS				
<del></del>		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSI.	ATION
						<u></u>	YRS	1910
	AK							
	AL							
	AM							
	AN							
	AO							
	0	THER PRIOR ART (	Including Au	thor, Title, Date, Pe	ertinent	Pages, Rt	c.)	
SH	AP	Kroto, Giant Pu	llerenes, <u>Ch</u>	emistry in Britain,	1990, pp.	40-43		
	AR			nd Spheroidal Carbon 14, 1989, pp. 169-179		s in Inte	rstellar	Grain
	AS	Kroto, The Stab 70, <u>Nature</u> , 329		Fullerenes C _n , with 529-531	n=24, 28	, 32, 36,	50, 60	and
	AT	Kroto, Space, S	tars, C60 and	d Soot, <u>Science</u> , 242,	, 1988, r	p. 1139-1	145	
	AU	Kroto, Chains and Hydrocarbons and		Interstellar Space, cs, pp. 197-206	Polycycl	ic Aromat	ic	
V	AV			synthesis of diamonds. Lett., 52(6), 1988			chemica	1
REALINER	/:	Stuart Hendri	ickson/ (	270772006)				
	itatio			her or not citation is in sidered. Include copy of				

Form PTO-144! (REV. 7-50)		PATENT A	ARTHURFT OF COMMERCE ED TRADEMARK OFFICE	Atty. Docket Ho. 79132Y		Serial No. 08/471,8	90	
		ST OF PRIOR AF		Applicant Donald R. Huffman, et al	-	•	<u> </u>	
(Vse	seve	eral sheets if ne	ceasary)	Filing Date June 7, 1995		Group 1103		
	<del></del>		v.s.	PATENT DOCUMENTS		<del></del>		
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	KANCE	CLASS	SUBCLASS	FILING D	
	AA			·				
	AB							· · · · · ·
	AC							•
	AD							
	AB		:					
	AF						-	
	AG							
	НА	·			·			
	ΑI							
	АJ							<del></del>
······································			FORRICE	N PATENT DOCUMENTS		A	<u></u>	
		<u></u>			I			
		DOCUMENT NUMBER	DATE	COURTRY	CLASS	SUBCLASS	Translat	ION
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	YES	103 103
	AK	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS		
	AK AL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS		
	-	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS		
	AL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS		
	AL AM	DOCUMENT EUMBER	DATS	COUNTRY	CLASS	SUBCLASS		
	AL AM AN AO			thor, Title, Date, Pe			YES	
SH	AL AM AN AO	THER PRIOR ART (	Including Aut		ertinent	Pages, Rt	YES	
SH	AL AM AN AO	THER PRIOR ART ( Larsson et al., Chemical Physic Laszlo et al.,	OPTICAL SPECAL Letters,	thor, Title, Date, Po	PRAL C60-1-503	Pages, Rt	YES  C.)  NE-60",	150
SH	AL AM AN AO C	THER PRIOR ART ( Larsson et al., Chemical Physic Laszlo et al., Molecule, Journ Laszlo et al.,	Including Autority OPTICAL SPECTAL Letters,  A Study of the Study of the Geometric Control of Moleculary Control of Contr	thor, Title, Date, Portrum OF THE ICOSAHEI 137(6), 1987, pp. 501	PRAL C60-1-503  Truncate nem), 183  UV Spect	Pages, Et  *FULLERE  ed Icosah  , 1989, p	YES  OC.)  NE-60",  edral C ₆₀ p. 271-276  e Truncate	BO B
SH	AL AM AN AO CO AP	THER PRIOR ART (  Larsson et al.,  Chemical Physic  Laszlo et al.,  Molecule, Journ  Laszlo et al.,  Icosahedral C ₆₀	Including Autoprical SPECal Letters,  A Study of the Second Molecule, Chaude de Pouss	thor, Title, Date, Portrum OF THE ICOSAHEI 137(6), 1987, pp. 501 he UV Spectrum of the lar Structure (Theocherical Structure and	PRAL C60-1-503 Partinent ORAL C60-1-503	Pages, Rt "FULLERE ed Icosah 1989, p	YES  OC.)  NE-60",  edral C ₆₀ p. 271-278  e Truncate pp. 418-4	8 ed 22
SH	AL AM AN AO C AP AR	THER PRIOR ART ( Larsson et al., Chemical Physic  Laszlo et al., Molecule, Journ  Laszlo et al., Icosahedral C ₆₀ Lefeure, J., Et Fasc. 4, pp. 73  Lefevre, An Exp	Including Autority OPTICAL SPECTAL Letters,  A Study of the A Stud	thor, Title, Date, Per CTRUM OF THE ICOSAHEI 137(6), 1987, pp. 501 he UV Spectrum of the lar Structure (Theocherical Structure and emical Physics Letter	ORAL C60-1-503  Truncatement, 183  UV Spectors, 136(!	Pages, Rt "FULLERE ed Icosah 1989, p rum of th 5), 1987,	YES  OC.)  NE-60",  edral C ₆₀ p. 271-278  e Truncate pp. 418-4	8 ed 22
SH	AL AM AN AO AP AR AS	THER PRIOR ART ( Larsson et al., Chemical Physic  Laszlo et al., Molecule, Journ  Laszlo et al., Icosahedral C ₆₀ Lefeure, J., Et Pasc. 4, pp. 73  Lefevre, An Exp Silica, Astron.	OPTICAL SPECAL Letters,  A Study of the Second Molecule, Chaude de Pouss: 1-738  erimental Study	thor, Title, Date, Portagna of THE ICOSAHEI 137(6), 1987, pp. 501 he UV Spectrum of the lar Structure (Theocherical Structure and emical Physics Letter ieres de Fer et de Caudy of the Dust of Indian Structure of Indian Structure and emical Physics Letter ieres de Fer et de Caudy of the Dust of Indian Structure and Indian Physics Letter ieres de Fer et de Caudy of the Dust of Indian In	ORAL C60- 1-503 Truncat nem), 183 UV Spect rs, 136(!	Pages, Rt. "FULLERE ed Icosah 1, 1989, p rum of th 5), 1987, Tome 30, A	YES  OC.)  NE-60",  edral C ₆₀ p. 271-278  e Truncate pp. 418-4	8 ed 22
SH	AL AM AN AO AP AR AS AT AU	THER PRIOR ART ( Larsson et al., Chemical Physic  Laszlo et al., Molecule, Journ  Laszlo et al., Icosahedral C ₆₀ Lefeure, J., Et Pasc. 4, pp. 73  Lefevre, An Exp Silica, Astron.	Including Autopart of the Astrophysis and Astr	thor, Title, Date, Per CTRUM OF THE ICOSAHEI 137(6), 1987, pp. 501 he UV Spectrum of the lar Structure (Theocherical Structure (Theocherical Physics Letter ieres de Fer et de Caudy of the Dust of Inc.,5(1), 1970, pp. 37-1448., 5, 1970, p. 37-1448.	ORAL C60- 1-503 Truncat nem), 183 UV Spect rs, 136(!	Pages, Rt. "FULLERE ed Icosah 1, 1989, p rum of th 5), 1987, Tome 30, A	YES  OC.)  NE-60",  edral C ₆₀ p. 271-278  e Truncate pp. 418-4	8 ed 22

Sheet	20	of	31

Porm PTO-144: (REV. 7-80)		PATENT AI	ARTHURIT OF CONOCERCE O TRADEDIARK OFFICE	Atty. Docket Bo. 7913ZY		Serial No. 08/471,890		
		ST OF PRIOR AF		Applicant Donald R. Huffman, et al	•			
(Use	seve	eral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103		
			บ.8.	PATENT DOCUMENTS	<del>-</del>			-
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	MAKE	CLASS	SUBCLASS	PILDEG (if appro	
	AA							
	AB				-			
	AC						-	
	AD					;		
	AB		,			:		
	AF					·····		<del></del>
	AG		· · ·	-	-			
-	AH	·						
	AI							
	AJ		· - · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			-	
			FOREIG	PATENT DOCUMENTS		<u> </u>		
		DOCUMENT EURER	DATE	COUPTRY	CLASS	SUBCLASS	TRANSL	ATION
				•			YRS	<b>150</b>
	AK							
	AL					: :		
	AM			<u>, , , , , , , , , , , , , , , , , , , </u>	•			
<u> </u>	AN							• • • • • • • • • • • • • • • • • • • •
	AO							
	0	THER PRIOR ART (	Including Au	thor, Title, Date, Pe	ertinent	Pages, Bt	c.)	
SH	AΡ			ndidates for the Carr ral Carbon Ions, <u>Ast</u>				
SH	AR			of the "Unidentifie . Astrophys., 137, 19			tures of	<u> </u>
SH	AS			arbon Clusters from A J. Phys. Chem., 93,				rved
SH	AT	Liu et al., Negronature of $C_{60}$ , $C_{60}$	ative Carbon hemical Phys	Cluster Ion Beams:Ne ics <u>Letters</u> , 126(2),	ew Eviden 1986, pr	ce for th	e Specia	.1 
SH	AU	Loffler et al., Letters, 137(4)		Carbon Ions in Hydrod 306-310	carbon Fl	ames, <u>Che</u>	mical Ph	vsics
SH	AV	Luthi et al., Al Icosahedral C ₆₀ 135(4)(5), 1987	Molecule "Bu	dies on the Thermodyr ckminsterfullerene", 0	namic Sta <u>Chemica</u>	bility of Physics	the <u>Letters</u>	,
REMINER		Stuart Hendr	ickson/ (	1270772006)				
• HEAMINE	R: In	itial if reference o	onsidered, whet	her or not citation is in	conformanc	e with MPEP	609; draw	line
curondu c	LTAT10	n it not in conforms	ece and dot con	sidered. Include copy of	CUTS IGLO	ATEN DENE C	Cat1	UII CQ

applicant.

Porm PTO-1449 (REV. 7-80)		PATEST AN	STHEST OF CONCERCE D TRADESCARE OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,890			
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al	•				
(Use	seve	ral sheets if ne	севвату)	Filing Date June 7, 1995		Group 1103			
		· · · · · · · · · · · · · · · · · · ·	U.S.	PATENT DOCUMENTS					
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	HAMB	CLASS	SUBCLASS	PILING DATE (if appropriate)		
	AA	***							
	AB		•						
	AC								
	AD								
	AE								
	AF								
	AG								
	AH	·			·	;			
	AI								
	AJ								
PORBIGN PATENT DOCUMENTS									
		DOCUMENT NUMBER	DATE	COMBLEX	CLASS	SUBCLASS	TRANSLATION		
	AK			•			YES NO		
	AL			·					
	AM								
	AN			,					
	AO		<u> </u>						
	o	THER PRIOR ART (	Including Au	thor, Title, Date, Pe	rtinent	Pages, Et	c.)		
SH	AP			ndidates for the Carr ral Carbon Ions, <u>Ast</u>					
SH	AR			n of the "Unidentifie . Astrophys., 137, 19			tures of		
SH	AS			arbon Clusters from A J. Phys. Chem., 93,					
SH	AT			Cluster Ion Beams:Ne ics Letters, 126(2),					
SH	AU	Loffler et al., Letters, 137(4)		Carbon Ions in Hydrod 306-310	carbon Fl	ames, <u>Che</u>	mical Physics		
SH	AV	Luthi et al., Al Icosahedral C ₆₀ 135(4)(5), 1987	Molecule "Bu	dies on the Thermodyr ckminsterfullerene", O	amic Sta Chemical	bility of Physics	the <u>Letters</u> ,		
EXAMINER		/Stuart Hend:	rickson/	DATE CONSIDERED (12/07/2006)					
	Ltat1o			ber or not citation is in sidered. Include copy of					

								<del></del>
Form PTO-144: (REV, 7-80)		O.S. DEP. PATEST AS ST OF PRIOR AS	ARTICIST OF CHOCKES IN TRADSPORK OFFICE  RT	Atty. Docket Bo. 7913ZY		Serial No. 08/471,8		·
	CI	TED BY APPLICA	NT	Applicant Donald R. Huffman, et al				
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
			U.S.	PATENT DOCUMENTS	<u> </u>	<u> </u>	<del></del>	
EXAMINER		DOCUMENT NUMBER	DATE	NAMB	CLASS	SUBCLASS	PILING	DATE
INITIAL*	<b> </b>				<del></del>		(if appro	opriate)
	AA							
	AB							<del></del>
	AC	<u> </u>						
	AD							
	AE							
	AF							
	AG			<del></del>	<b></b>			
	AH							
	AI	<u> </u>			<u> </u>			
	ΑJ							
			PORBIG	N PATENT DOCUMENTS				
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSL	ATION
							YES	NO
-	AK							
	AL							
	AM			,	<del></del>			
	AN							
	AO							
	o	THER PRIOR ART (	Including Aut	thor, Title, Date, Pe	ertinent	Pages, Bt		
SH	AP	Marynick et al.	, Localized M	Molecular Orbitals an	nd Blectr	onic Struc	cture of	
SH	AR	Mataumoto, Chemi	ical vapour d	deposition of diamon	d in RF			ournal
		of Materials Science Letters, 4, 1985, pp. 600-602  Matsumoto et al., Synthesis of diamond films in a rf induction thermal plasma,						
SH	AS	Matsumoto et al.	., Synthesis			uction th	ermal pl	asma,
SH	AS AT	Matsumoto et al. Appl. Phys. Lett Matsumoto et al.	., Synthesis t., 51(10), 1	of diamond films in	a rf ind			asma,
		Matsumoto et al. Appl. Phys. Lett  Matsumoto et al. Journal of Mater  McBlvany et al.	., Synthesis t., 51(10), 1 ., Growth of rials Science	of diamond films in 1987, pp. 737-739 diamond particles fr	a rf ind com metha 5-3112 Large Cl	ne-hydrogo uster Ion	en gas,	ed by
SH	AT	Matsumoto et al. Appl. Phys. Lett  Matsumoto et al. Journal of Mater  McBlvany et al. Direct Laser Var  McElvany et al.	., Synthesis t., 51(10), 1 ., Growth of rials Science , FIMS Studie porization, (	of diamond films in 1987, pp. 737-739 diamond particles fre, 17, 1982, pp. 3106 es of Mass-Selected,	a rf ind  com metha 5-3112  Large Cl ters, 134  of Mass S	ne-hydrogouster Ion (3), 1987	en gas, s Produce, pp. 21e	ed by 4-219 uster
SH	AT AU	Matsumoto et al. Appl. Phys. Lett  Matsumoto et al. Journal of Mater  McBlvany et al. Direct Laser Var  McElvany et al.	., Synthesis t., 51(10), 1 ., Growth of rials Science , FIMS Studie porization, ( , Ion-Molecul Laser Vaporiz	of diamond films in 1987, pp. 737-739 diamond particles fre, 17, 1982, pp. 3106 es of Mass-Selected, Chemical Physics Lettele Reaction Studies of	a rf ind  com metha 5-3112  Large Cl ters, 134  of Mass S	ne-hydrogouster Ion (3), 1987	en gas, s Produce, pp. 21e	ed by 4-219 uster

والمالات المتالية والمتالية والمتالية والمتالية

Porm PTO-1445 (REV. 7-80)		PATEST AR	ATHERT OF CONCERCE D TRANSPORK OFFICE	Atty. Docket No. 7913ZY						
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al						
(Use	seve	ral sheets if ned	cessary)	Filing Date June 7, 1995		Group 1103	<u> </u>			
			U.S.	PATENT DOCUMENTS						
INITIAL*		DOCUMENT EURER	DATE	HANCE	CLASS	SUBCLASS	PILING (if appro			
	AA	,								
	AB									
	AC									
	AD									
	AE							- "		
	AF									
	AG			•						
	АН						,			
	AI		- -							
	<b>LA</b>		- -							
	FORBIGN PATENT DOCUMENTS									
- <b>-</b> -		DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS TRANSLATI						ATION		
							YES	HO		
	AK									
	AL						<u>.                                    </u>			
<u> </u>	AM			· · · · · · · · · · · · · · · · · · ·						
	AN									
		THE DOLD ANY (	Including Au	thor, Title, Date, Po	ertinent	Pages Rt	<u> </u>			
	AP	McKee et al., Ca	alculated Pro	operties of C _{so} Isome	rs and Fr			o <u>f</u>		
SH_	AR	Miller, Buckmins	terfulleren	em.), 153, 1987, pp. e-A Molecular Materia		e Puture?	, Adv. M	ater.		
SH		3, 5, 1991, pp.	<del></del>	-3			Toba Ma	33		
SH	AS		Electronic a	cal Investigation of Spectra of Buckminsto 31-36						
SH	AT			Buckminsterfulleren 6, pp. 2469-2470	e and Rel	ated Carb	on Clust	ers,		
SH	AU		ased on Expe	"Magic Numbers in Cn rimental Observation				<u>8</u> ,		
SH	AV			s of buckminster-ful , 1988, pp. 220-230	lerene ar	d other c	arbon cl	uster		
EXAMILER	/	Stuart Hendri	ckson/ (	270772006)						
	itatio			her or not citation is in sidered. Include copy of						

ì

Porm PTO-144 (REV. 7-80)	REV. 7-80) PATEST AND TRADESCAR OF			Atty. Docket No. 79132Y	Serial No. 08/471,890				
		ST OF PRIOR AND INCOME.		Applicant Donald R. Ruffman, et al	·•	<u> </u>			
(Use	seve	eral sheets if ne	cessary)	Filing Date June 7, 1995	<del></del>	Group 1103			
-			v.s.	PATENT DOCUMENTS					
READURER INITIAL*	1	DOCUMENT HUMBER	DATE	EAME	CLASS	SUBCLASS		DATE opriate)	
	AA								
	AB	•		,					
	AC								
	AD								
	AB								
	AF								
	AG			<del> </del>			i		
	AH				·				
	AI								
	ΑJ								
<del></del>	PORBIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS TRANSLATION							
				<u>.</u>			YES	190	
	AK								
	AL								
	AM			•				<del></del>	
	AN								
	AO				<u> </u>	·		<del>_</del>	
	0	THER PRIOR ART (	Including Aut	thor, Title, Date, Pe	ertinent	Pages, Bt	c.)	<u> </u>	
SH	AP			of Large Carbon Clust 30(1)(2), 1986, pp. 1		by Laser	Vaporiza	ition,	
SH	AR			States and Bond Lengemical Physics Letter				-244	
SH	AS	Paquette, Dodec 1051-1065	ahedranes and	d Allied Spherical Mo	olecules,	Chem. Re	<u>v.</u> , 1989	), pp.	
SH	AT			ns of Small Carbon Cl Chem. Soc., 111, 1989			res by		
SH	UA	Pussoletti et a 25-42	l., Experimen	nts on Cosmic Dust Ar	alogues,	Proceedi	<u>nqs</u> , 149	pp.	
SH	AV	Peak of Graphit	e Spheres wit	vities and Mantles in th Particular Referen Space Science, 125,	nce to a	Possibly	Discover		
REALITIER	/s	tuart Hendri	ckson/ (1	2 <del>707</del> 7 <del>20087</del>					
	itatio			her or not citation is in sidered. Include copy of					

L

Form PTO-144 (REV. 7-80)	•	U.S. DEP. PATEST A	U.S. DEPARTMENT OF COMMERCE Atty. Docket No.  PATENT AND TRADEDARK OFFICE 7913ZY  Serial No.  09/471 890					
		ST OF PRIOR A		Applicant		08/471,8	90	<del></del>
		TED BY APPLICA	_	Donald R. Huffman, et a	1.	•		
(Use	seve	eral sheets if ne	cessary)	Piling Date June 7, 1995		Group 1103		
			<b>U.S.</b>	PATENT DOCUMENTS		<del></del>		
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	RANG	CLASS	SUBCLASS	PILING (if appro	
	AA							
	AB							
	AC		_				-	<del></del>
	AD							7-
	AE							
	AF				ļ			
	AG			· · · · · · · · · · · · · · · · · · ·				
	AH	·			·			
	AI				<b>*</b>			
	AJ							
PORBIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER DATE COUNTRY CLASS SUBCLASS TRANSLATION						
				•			YRS	EQ
	AK				ļ			
	AL							<b></b>
	AM							
	AN							
	AO				<u> </u>			
				thor, Title, Date, Po				
SH	AP	Randic et al., C Chemical ACTA, 6	on the Aromat 50(4), 1987,	cic Stability of a Copp. 595-604	onjugated	C ₆₀ Clust	er, <u>Croa</u>	<u>tia</u>
· SH	AR	Rohlfing, High F Carbonaceous Clu	Resolution Ti usters, <u>J. C</u> r	ime-of-Plight Mass Speem. Phys., 93(11),	pectromet 1990, pp.	ry of Car 7851-766	bon and 2	
SH	AS			Studies of Atomic, Mo ization Cluster Sour				
SH	AT	Rohlfing et al., in a Supersonic	, Two-Color F Flow, <u>Chemic</u>	Pyrametric Imaging of cal Physics Letters,	E Laser-H 170(1),	eated Car 1990, pp.	bon Part: 44-50	icles
SH	AU			and characterization, 1994, pp. 3322-33		rsonic ca	rbon clus	ster
SH	AV	Shells:Study of	the LaC, and	ructure of Spheroida. d C ₆₀ Clusters and Th nys. D-Atoms, Molecu	eir Ions	Within th	e Local	. 387-
EXAMINER		/Stuart Hend	rickson/	(12/07/2006)				
* KKAMIHR through ci applicant.	itatio	itial if reference con if not in conformar	maidered, wheth	mer or not citation is in sidered. Include copy of	conformance this form	e with MPRP with next co	609; draw mmunicatio	line n to

Form PTO-1449 (REV. 7-80)		PATENT AN	O.S. DEPARTMENT OF COMMERCE ALTY. Docket Bo. 7913ZY  Serial Bo. 7913ZY  08/471,890					
	CIT	ST OF PRIOR AR	VT	Applicant Donald R. Huffman, et al		<u> </u>		
(Use	seve	ral sheets if ned	cessary)	Filing Date June 7, 1995		Group 1103		
			บ.ร.	PATENT DOCUMENTS				
KKAMIHER INITIAL®		DOCUMENT NUMBER	DATE	EMANE	CLASS	SUBCLASS		DATE (opriate)
	AA			·				
	AB							
	AC							
	AD							
	AE							
	AF	•					<del> </del>	
	AG							
	АН	·						
	AI				·		· · · · · · · · · · · · · · · · · · ·	
	AJ							
FORBIGN PATENT DOCUMENTS								
		DOCUMENT NUMBER	DATE	COUNTRY -	CLASS	SUBCLASS		LATION
	2.7				<u> </u>		YES	NO.
	AK						_	_
	AM				<u> </u>			<del> </del>
	AN							
	AO							
·		THER PRIOR ART (1	Including Aut	thor, Title, Date, Po	ertinent	Pages, Bt	c.)	
SH	AP	Challenge for La	ser Spectros	rum of the Icosahedra scopy, Laser Spectros ence, 1987, pp. 250-2	scopy VII	*FULLEREN	E-60":A dings o	f the
SH	AR		Positively a	of the Ionization Thr and Negatively Charge 5-2526				
SH	<b>RA</b>		ies of the s	le Calculations of t Spheroidal Molecules 703				
SH	TA			onal Study of Relative hermochimica Acta, 1				and
SH	ÜA			d C70(g):A COMPUTATIONS, <u>Car</u>				
SH	VA			ure of the Truncated 30(6), 1986, pp. 545		ral C ₆₀ Cl	uster,	
REAMINER		/Stuart Hend	drickson/	(129 <del>07720</del> 06)				
* REMUNE through c applicant	ltatio	itial if reference or m if not in conformat	maidered, wheth	her or not citation is in sidered. Include copy of	conformance this form	e with MPEP with next o	609; dram communicat:	line ion to

Porm PTO-1445 (REV. 7-80)		PATEST A	ARTHURIT OF CONGERCE OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,8		
		ST OF PRIOR AN		Applicant Donald R. Huffman, et al				
(Use	seve	eral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103		······································
			v.s.	PATENT DOCUMENTS	<del></del>	<u> </u>		
EXAMINER INITIAL*		DOCUMENT HUMBER	DATE	NAME	CLASS	SUBCLASS	PILING (if appr	
	AA			·				
	AB							
	AC							
	AD							
	·AE					<u></u>		
	AF							
	AG							<del></del>
	АН				·			
	IA							<del></del>
	ΑJ							
		<u> </u>	FOREIG	N PATENT DOCUMENTS	<b>1</b>		L	
		DOCUMENT NUMBER	DATE	DATE COUNTRY CLASS SUBCLASS TRANSLATI				
							YES	NO
	AK							
	AL					<u> </u>		
	AM							
	AN							
	AO							
	0	THER PRIOR ART (	Including Au	thor, Title, Date, Po	ertinent	Pages, Bt	c.)	
SH	AP	Schmalz et al., 203-207	C ₆₀ Carbon C	ages, <u>Chemical Physi</u>	cs Lette	<u>cs</u> , 130(3)	, 1986,	pp.
	AR	Schmalz et al.,	Blemental Ca	arbon Cages, <u>J. Am.</u>	Chem. Soc	., 110, 1	988, 111	13-1127
	AS			l Clusters of Carbon 41(1)(2), 1987, pp.		ne C ₂₄ and	C ₆₀ Mole	cules,
	AT	Thermal Interco	nversions of	Contractions at High Aceanthrylene, Acep 7, pp. 5461-5465				
	AU	Shibuya et al., Physics Letters		dral Structures for 87, pp. 13-16	the C ₆₀ C	luster, <u>Ch</u>	nemical	
$\bigvee$	AV	Populations with	h Temperatur	e:A Combined Aml Quant Czecholslayak Chem	ntum-Chen	nical and	Statisti	ical-
BEAMUNER	_	/Stuart Hend:	rickson/	12707/2006)				
	Ltatio			her or not citation is in midered. Include copy of				

Sheet	28	of _	31
-------	----	------	----

Porm PTO-144										
(REV. 7-80)	_	PATEST AS ST OF PRIOR AR	ATTREET OF COMMENTS OF TRANSMILL OFFICE	Atty. Docket No. 7913ZY		Serial No. 08/471,8				
		TED BY APPLICA		Applicant Donald R. Huffman, et a	1.					
(Vise	Beve	eral sheets if ne	севва <b>r</b> y)	Filing Date June 7, 1995		Group .1103				
<u>.                                    </u>			U.S.	PATENT DOCUMENTS		L				
EXAMINER		DOCUMENT MUMBER	DATE	EOMOR	CLASS	SUBCLASS	AITIR	G DATE		
INITIAL*			<del></del>		<del> </del>	ļ. <u> </u>	(if app	ropriate)		
	AA			· · · · · · · · · · · · · · · · · · ·				_		
	AC	· · · · · · · · · · · · · · · · · · ·	<del></del>		<del>                                     </del>		<u> </u>			
	AD		<u> </u>			<del> </del>				
	<b>1</b>									
	AB							-		
	AF			-	<u> </u>					
	AG		·		<u> </u>		<u> </u>			
	AH									
	AI		- <del></del>					·		
	AJ							7		
	PORBIGN PATENT DOCUMENTS									
		DOCUMENT MUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANS	LATION		
				-			YRS	BO		
_	AK									
	AL				<u> </u>			<u></u>		
	AM									
	AN									
	AO					· .				
		THER PRIOR ART ()	Including Au	thor, Title, Date, P	ertinent	Pages, Bt	c.)			
SH	АР			Stability Reasoning with the C ₆₀ -C ₇₀ Syste						
SH	AR		and C, Clu	mically Supported Vi sters, <u>Journal of Mo</u>						
SH	AS			ies of Carron Cluste Conference Publicati						
SH	AT			Cluster Beams, In Atsevies, <u>Science</u> , 199			Cluste	rs,		
SH	AU	Snow et al., A S Astrophys., 213,		nterstellar and Circ 291-294	umstellar	C _{so} , <u>Ast</u>	on.			
SH	AV	So et al., First Fourier Transfor	. Observation rm Mass Speci	n of Carbon Aggregat trometry, <u>J. Phys. C</u>	e Ions>C, <u>hem.</u> , 93,	o+ by Lase 1989, pp	r Desor	ption 1187		
RECAMINER		/Stuart Her	ndrickson	(12/07/2006)						
• EXAMINE through c applicant	itatic	itial if reference co	msidered, wheti	ber or not citation is in midared. Include copy of	conformance this form	e with MPRP with next c	609; drav	line lon to		

FORTH PTO-1449 U.S. DEPARTMENT OF CONCERCE PATROT AND TRADEGRE OFFICE			Atty. Docket No. 7913EY		Serial No. 08/471,890					
		ST OF PRIOR AR		Applicant Donald R. Huffman, et al.						
(Use	seve	ral sheets if ne	cessary)	Filing Date June 7, 1995	Group 1103					
	U.S. PATENT DOCUMENTS									
REAMINER INITIAL*		DOCUMENT NUMBER .	DATE	EAMB	CLASS	SUBCLASS	PILING DATE (if appropriate)			
	AA			•						
	AB									
	AC									
	AD		-							
	.AB		•							
	AP				·					
_	AG					-				
-	AH.	·			•					
	AI									
	AJ									
			FOREIGE	PATENT DOCUMENTS						
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION			
				-			YES NO			
	AK		<del></del>							
	AL									
	AM									
	AN						<u>.</u> .			
	AO									
				hor, Title, Date, Pe	:					
SH	AP	Somerville et al., An Astronomical Search for the Molecule C., Mon. Nat. R. Ast. Soc., 240, 1989, Short Communication, pp. 41p-46p								
SH	AR	Spitsyn, B.V., et al., Vapor Growth of Diamond on Diamond and Other Surfaces, Journal of Crystal Growth, 52, 1981, pp. 219-226								
SH	AS	Stankevich et al., The Structural Chemistry of Crystalline Carbon: Geometry, Stability, and Electronic Spectrum, Russian Chemical Reviews, 53(7), 1984, pp. 640-655								
SH	AT	Stanton et al., Normal Vibrational Modes of Buckminsterfullerene, <u>J. Phys.</u> <u>Chem.</u> , 92, 1988, pp. 2141-2145								
SH	AU	Stone et al., Theoretical Studies of Icosahedral C60 and Some Related Species, Chemical Physics Letters, 128(5)(6), 1986, pp. 501-503								
SH	AV	Taylor et al., Isolation, Separation and Characterization of the Fullerenes $C_{60}$ and $C_{70}$ : The Third Form of Carbon, <u>J. Chem. Soc.</u> , Chem. Commun., 1990								
/Stuart Hendrickson/ (12/07/2006)										
* REMINER: Initial if reference considered, whether or not citation is in conformance with MPKP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.										

Ports PTO-1449 U.S. DEPARTMENT OF CONCERCS (REV. 7-80) PATENT AND TRADEGURE OFFICE			Atty. Docket Ho. 7913ZY		Serial No. 08/471,890				
		ST OF PRIOR AR	<del></del>	Applicant Donald R. Huffman, et al.					
9aU)	Beve	ral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103			
U.S. PATENT DOCUMENTS									
READITHER INITIAL*		DOCUMENT NUMBER	DATE	HAKE	CLASS	SUBCLASS	FILING (if appro		
··	AA			·					
	AB								
	AC								
	AD								
	AE								
	AF								
	AG								
	AH	•							
	AI								
	АJ								
			FOREIG	PATENT DOCUMENTS					
		DOCUMENT RUNCHER	DOCUMENT NUMBER DATE COUNTRY CLASS						
				•			YRS	190	
	AK				_				
	AL							—	
	AM								
	AN								
	AO	MEND DOTOD ADT (	Including But	hor, Title, Date, Pe	rtinent	Pages Rt	<b>C</b> )		
			<u>_</u>	inction Bfficiency o			_	egion	
SH ^S	Hyb			<u>Science</u> , 243, 1973,					
SH	AR	Wales, Closed-Shell Structures and the Building Game, Chemical Physics Letters, 141(6), 1987, pp. 478-494							
SH	AS	Weeks et al., Rotation-Vibration Spectra of Icosahedral Molecules. II. Icosahedral Symmetry, Vibrational Eigenfrequencies, and Normal Modes of Buckminsterfullerene, <u>J. Chem. Phys.</u> , 90(9), 1989, pp. 4744-4771							
SH	AT	Weiss et al., Photophysics of Metal Complexes of Spheroidal Carbon Shells, <u>J.</u> <u>Am. Chem. Soc.</u> , 110, 1988, pp. 4464-4465							
SH	UA	Weltner, Jr., et al., Carbon Molecules, Ions and Clusters, <u>Chem. Rev.</u> , 89, 1989, pp. 1713-1747							
SH	AV	Wilcox, Jr., Extraction with Solvents, Experimental Organic Chemistry, pp. 79-80							
/Stuart Hendrickson/ (12707/2006)									
• EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPRP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.									

Form PTO-1449 U.S. DEPARTMENT OF CONCERCE PATENT AND TRADEGURE OFFICE				Atty. Docket No. 79132Y		Serial No. 08/471,890			
LIST OF PRIOR ART CITED BY APPLICANT				Applicant Donald R. Huffman, et al.					
eeU)	seve	ral sheets if ne	cessary)	Filing Date June 7, 1995		Group 1103			
U.S. PATENT DOCUMENTS									
EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	RAME	CLASS	SUBCLASS	PILIEG DATE (if appropriate)		
	AA								
	AB						· · · · · · · · · · · · · · · · · · ·		
	AC				<u> </u>				
•	ΑD								
	AE								
<del></del>	AF								
	AG								
	AH	•			•				
	AI								
	AJ		-						
			FOREIG	N PATENT DOCUMENTS					
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION		
					<u> </u>	ļ	YES 190		
	AK			<u>{</u>					
	AL								
	AM								
	AN								
	AO			The Mile Date D		Pages Pt			
GT	Τ	<del></del>	<del></del>	Characa I Char Phy		<del></del>			
SH	AP			Spheres, <u>J. Chem. Phy</u>	<del> </del>	<del> </del>	11-1-1-1		
SH		Wu et al., Vibrational Motions of Buckminsterfullerene, <u>Chemical Physical</u> <u>Letters</u> , 137(3), 1987, pp. 291-294							
SH	AS	Yang et al., Ups of buckminsterfullerence and other Large clusters of Carbon, Chemical Physics Letters, 139(3)(4), 1987, pp. 233-238							
SH	AT	Yang et al., Ups of a 2-30-Atom Carbon Clusters: Chains and Rings, Chemical Physics Letters, 144(5)(6), pp. 431-436							
SH	AU	Zhang et al., Reactivity of Large Carbon Clusters: Spheroidal Carbon Shells Their Possible Relevance to the Formation and Morphology of Soot, <u>The Journal of Physical Chemistry</u> , 90(4), 1986, pp. 525-528.							
	AV								
READURER		/Stuart Hend:	rickson/	DATE CONSIDERED (12/07/2006)					
through o	* HEAMINER: Initial if reference considered, whether or not citation is in comformance with MPRP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.								

INFORMATION DISCLOSURE C. (ATION			Docket Number (Optional) 7913ZY		Application Number 08/471,890		
	III OI	(Use several sheets if necessa		Applicant(s)  Donald R. Huffman,	et al.		
				Filing Date		Group Art Unit	
	-			June 7, 1995	5		1754
	<del>,                                    </del>		- ₁	U.S. PATENT DOCUMENTS			
EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
				1			
				- OF			
				0, 2			
			·	MAR 0 7 2000		Ì	
		·		PAR TRADEMENT		70	
		<del></del>				170	RE
						0 3	R CE
						=	/ED
				· · · · · · · · · · · · · · · · · · ·		800%	
					:		
			F	OREIGN PATENT DOCUMENTS	<u> </u>	<del></del>	
	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES NO
						<u> </u>	
				•			
					·		
						te, Pertinent Pag	
SH S		P.H. Fang, et al. "Eviden	ice for Fullerene in	a Coal of Yunnan, Southwesters	n China", Ma	t. Res. Innova	l, 1997 1:130-132.
Y A BATNIPP	1-				•	•	
KAMINER	P-7.	tuart Hendrickson/				: a: <del></del>	
KAMINER: nsidered. I	Initial if nclude co	f citation considered, whether or no population considered, whether or no population of this form with next community	ot citation is in confo nication to applicant.	rmance with MPEP Section 609; Drav	v line through c	itation if not in c	conformance and not